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SEQUENCE LISTING

5 <110> Michel, Albrecht
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 Arias de Ares, Renee S.

10 <120> HERBICIDE-RESISTANT PLANTS, AND POLYNUCLEOTIDES AND
 METHODS FOR PROVIDING SAME

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	Phe	Ser	Arg	Ser	Pro	Leu	Leu	Ser	Val	Tyr	Ala	Asp	Met	Ser	Val	Thr	
				420					425					430			
40	Cys	Lys	Glu	Tyr	Tyr	Ser	Pro	Asn	Gln	Ser	Met	Leu	Glu	Leu	Val	Phe	
			435					440					445				
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	450					455						460					
	Ala	Thr	Met	Thr	Glu	Leu	Ala	Lys	Leu	Phe	Pro	Asp	Glu	Ile	Ser	Ala	
	465				470						475				480		
45	Asp	Gln	Ser	Lys	Ala	Lys	Ile	Leu	Lys	Tyr	His	Val	Val	Lys	Thr	Pro	
				485						490					495		
	Arg	Ser	Val	Tyr	Lys	Thr	Val	Pro	Asn	Cys	Glu	Pro	Cys	Arg	Pro	Ile	
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50	Gln	Arg	Ser	Pro	Ile	Glu	Gly	Phe	Tyr	Leu	Ala	Gly	Asp	Tyr	Thr	Lys	
			515					520					525				
	Gln	Lys	Tyr	Leu	Ala	Ser	Met	Glu	Gly	Ala	Val	Leu	Ser	Gly	Lys	Leu	
			530				535					540					
	Cys	Ala	Gln	Ala	Ile	Val	Gln	Asp	Ser	Glu	Leu	Leu	Ala	Thr	Arg	Gly	
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 20 180
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 25 atgacttcat agctgtgggt tgtcttatgg ctccttgaat ttgcagtagt ctgcctgtac
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 30 Met Asp
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 35 40 45 50

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 50 Arg Ser His Arg Arg His Pro Ala Leu Gln Val Val Cys Lys Asp Phe
 55 60 65

 cca aga cct cca cta gaa agc aca ata aac tat ttg gaa gct gga cag
 596
 55 Pro Arg Pro Pro Leu Glu Ser Thr Ile Asn Tyr Leu Glu Ala Gly Gln

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	ctc tct tca ttt ttt aga aac agc gaa cgc ccc agt aag ccg ttg cag		
	644		
5	Leu Ser Ser Phe Phe Arg Asn Ser Glu Arg Pro Ser Lys Pro Leu Gln	90	95
	85		
	gtc gtg gtt gct ggt gca gga ttg gct ggt cta tca aca gcg aag tat		
	692		
10	Val Val Val Ala Gly Ala Gly Leu Ala Gly Leu Ser Thr Ala Lys Tyr	105	110
	100		
	ctg gca gat gct ggc cat aaa ccc ata ttg ctt gag gca aga gat gtt		
	740		
15	Leu Ala Asp Ala Gly His Lys Pro Ile Leu Leu Glu Ala Arg Asp Val	120	125
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	ttg ggt gga aag gta gct gct tgg aag gat gaa gat gga gat tgg tac		
	788		
20	Leu Gly Gly Lys Val Ala Ala Trp Lys Asp Glu Asp Gly Asp Trp Tyr	135	140
			145
	gag act ggg ctt cat ata ttt ttt gga gct tat ccc aac ata cag aat		
	836		
25	Glu Thr Gly Leu His Ile Phe Phe Gly Ala Tyr Pro Asn Ile Gln Asn	150	155
			160
	ctg ttt ggc gag ctt agg att gag gat cgt ttg cag tgg aaa gaa cac		
	884		
30	Leu Phe Gly Glu Leu Arg Ile Glu Asp Arg Leu Gln Trp Lys Glu His	165	170
			175
	tct atg ata ttc gcc atg cca aac aag cca gga gaa ttc agc cgg ttc		
	932		
35	Ser Met Ile Phe Ala Met Pro Asn Lys Pro Gly Glu Phe Ser Arg Phe	180	185
			190
	gat ttc cca gaa act ttg cca gca cct ata aat ggg ata tgg gcc ata		
	980		
40	Asp Phe Pro Glu Thr Leu Pro Ala Pro Ile Asn Gly Ile Trp Ala Ile	195	200
			205
	ttg aga aac aat gaa atg ctt act tgg ccg gag aag gtg aag ttt gca		
	1028		
45	Leu Arg Asn Asn Glu Met Leu Thr Trp Pro Glu Lys Val Lys Phe Ala	215	220
			225
	atc gga ctt ctg cca gca atg gtt ggt ggt caa cct tat gtt gaa gct		
	1076		
50	Ile Gly Leu Leu Pro Ala Met Val Gly Gly Gln Pro Tyr Val Glu Ala	230	235
			240
	caa gat ggc tta acc gtt tca gaa tgg atg aaa aag cag ggt gtt cct		
	1124		
55	Gln Asp Gly Leu Thr Val Ser Glu Trp Met Lys Lys Gln Gly Val Pro	245	250
			255

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 1172
 5 Asp Arg Val Asn Asp Glu Val Phe Ile Ala Met Ser Lys Ala Leu Asn
 260 265 270

ttc ata aat cct gat gag cta tct atg cag tgc att ttg att gct ttg
 1220
 10 Phe Ile Asn Pro Asp Glu Leu Ser Met Gln Cys Ile Leu Ile Ala Leu
 275 280 285 290

aac cga ttt ctt cag gag aag cat ggt tct aaa atg gca ttc ttg gat
 1268
 15 Asn Arg Phe Leu Gln Glu Lys His Gly Ser Lys Met Ala Phe Leu Asp
 295 300 305

ggt aat ccg cct gaa agg cta tgc atg cct att gtt gat cac att cgg
 1316
 20 Gly Asn Pro Pro Glu Arg Leu Cys Met Pro Ile Val Asp His Ile Arg
 310 315 320

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 1364
 25 Ser Arg Gly Gly Glu Val Arg Leu Asn Ser Arg Ile Lys Lys Ile Glu
 325 330 335

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 1412
 30 Leu Asn Pro Asp Gly Thr Val Lys His Phe Ala Leu Ser Asp Gly Thr
 340 345 350

caa ata act gga gat gct tat gtt tgt gca aca cca gtc gat atc ttc
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 35 Gln Ile Thr Gly Asp Ala Tyr Val Cys Ala Thr Pro Val Asp Ile Phe
 355 360 365 370

aag ctt ctt gta cct caa gag tgg agt gaa att act tat ttc aag aaa
 1508
 40 Lys Leu Leu Val Pro Gln Glu Trp Ser Glu Ile Thr Tyr Phe Lys Lys
 375 380 385

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 1556
 45 Leu Glu Lys Leu Val Gly Val Pro Val Ile Asn Val His Ile Trp Phe
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 1604
 50 Asp Arg Lys Leu Asn Asn Thr Tyr Asp His Leu Leu Phe Ser Arg Ser
 405 410 415

tca ctt tta agt gtc tat gca gac atg tca gta acc tgc aag gaa tac
 1652
 55 Ser Leu Leu Ser Val Tyr Ala Asp Met Ser Val Thr Cys Lys Glu Tyr
 420 425 430

tat gac cca aac cgt tca atg ctg gag ttg gtc ttt gct cct gca gac
 1700
 Tyr Asp Pro Asn Arg Ser Met Leu Glu Leu Val Phe Ala Pro Ala Asp
 5 435 440 445 450
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 Glu Trp Ile Gly Arg Ser Asp Thr Glu Ile Ile Asp Ala Thr Met Glu
 10 455 460 465
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 1796
 Glu Leu Ala Lys Leu Phe Pro Asp Glu Ile Ala Ala Asp Gln Ser Lys
 15 470 475 480
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 1844
 Ala Lys Ile Leu Lys Tyr His Ile Val Lys Thr Pro Arg Ser Val Tyr
 20 485 490 495
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 1892
 Lys Thr Val Pro Asn Cys Glu Pro Cys Arg Pro Leu Gln Arg Ser Pro
 25 500 505 510
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 Ile Glu Gly Phe Tyr Leu Ala Gly Asp Tyr Thr Lys Gln Lys Tyr Leu
 30 515 520 525 530
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 1988
 Ala Ser Met Glu Gly Ala Val Leu Ser Gly Lys Leu Cys Ala Gln Ser
 35 535 540 545
 ata gtg cag gat tat agc agg ctc gca ctc agg agc cag aaa agc cta
 2036
 Ile Val Gln Asp Tyr Ser Arg Leu Ala Leu Arg Ser Gln Lys Ser Leu
 40 550 555 560
 caa tca gga gaa gtt ccc gtc cca tct tag ttgtagttgg ctttagctat
 2086
 Gln Ser Gly Glu Val Pro Val Pro Ser
 45 565 570
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 35 40 45
 Gly Arg Arg Ser His Arg Arg His Pro Ala Leu Gln Val Val Cys Lys
 50 55 60
 15 Asp Phe Pro Arg Pro Pro Leu Glu Ser Thr Ile Asn Tyr Leu Glu Ala
 65 70 75 80
 Gly Gln Leu Ser Ser Phe Phe Arg Asn Ser Glu Arg Pro Ser Lys Pro
 85 90 95
 Leu Gln Val Val Val Ala Gly Ala Gly Leu Ala Gly Leu Ser Thr Ala
 100 105 110
 20 Lys Tyr Leu Ala Asp Ala Gly His Lys Pro Ile Leu Leu Glu Ala Arg
 115 120 125
 Asp Val Leu Gly Gly Lys Val Ala Ala Trp Lys Asp Glu Asp Gly Asp
 130 135 140
 25 Trp Tyr Glu Thr Gly Leu His Ile Phe Phe Gly Ala Tyr Pro Asn Ile
 145 150 155 160
 Gln Asn Leu Phe Gly Glu Leu Arg Ile Glu Asp Arg Leu Gln Trp Lys
 165 170 175
 Glu His Ser Met Ile Phe Ala Met Pro Asn Lys Pro Gly Glu Phe Ser
 180 185 190
 30 Arg Phe Asp Phe Pro Glu Thr Leu Pro Ala Pro Ile Asn Gly Ile Trp
 195 200 205
 Ala Ile Leu Arg Asn Asn Glu Met Leu Thr Trp Pro Glu Lys Val Lys
 210 215 220
 35 Phe Ala Ile Gly Leu Leu Pro Ala Met Val Gly Gly Gln Pro Tyr Val
 225 230 235 240
 Glu Ala Gln Asp Gly Leu Thr Val Ser Glu Trp Met Lys Lys Gln Gly
 245 250 255
 Val Pro Asp Arg Val Asn Asp Glu Val Phe Ile Ala Met Ser Lys Ala
 260 265 270
 40 Leu Asn Phe Ile Asn Pro Asp Glu Leu Ser Met Gln Cys Ile Leu Ile
 275 280 285
 Ala Leu Asn Arg Phe Leu Gln Glu Lys His Gly Ser Lys Met Ala Phe
 290 295 300
 45 Leu Asp Gly Asn Pro Pro Glu Arg Leu Cys Met Pro Ile Val Asp His
 305 310 315 320
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 325 330 335
 Ile Glu Leu Asn Pro Asp Gly Thr Val Lys His Phe Ala Leu Ser Asp
 340 345 350
 50 Gly Thr Gln Ile Thr Gly Asp Ala Tyr Val Cys Ala Thr Pro Val Asp
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 Ile Phe Lys Leu Leu Val Pro Gln Glu Trp Ser Glu Ile Thr Tyr Phe
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 55 Lys Lys Leu Glu Lys Leu Val Gly Val Pro Val Ile Asn Val His Ile
 385 390 395 400
 Trp Phe Asp Arg Lys Leu Asn Asn Thr Tyr Asp His Leu Leu Phe Ser

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 Arg Ser Ser Leu Leu Ser Val Tyr Ala Asp Met Ser Val Thr Cys Lys
 420 425 430
 5 Glu Tyr Tyr Asp Pro Asn Arg Ser Met Leu Glu Leu Val Phe Ala Pro
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 Ala Asp Glu Trp Ile Gly Arg Ser Asp Thr Glu Ile Ile Asp Ala Thr
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 Met Glu Glu Leu Ala Lys Leu Phe Pro Asp Glu Ile Ala Ala Asp Gln
 465 470 475 480
 10 Ser Lys Ala Lys Ile Leu Lys Tyr His Ile Val Lys Thr Pro Arg Ser
 485 490 495
 Val Tyr Lys Thr Val Pro Asn Cys Glu Pro Cys Arg Pro Leu Gln Arg
 500 505 510
 15 Ser Pro Ile Glu Gly Phe Tyr Leu Ala Gly Asp Tyr Thr Lys Gln Lys
 515 520 525
 Tyr Leu Ala Ser Met Glu Gly Ala Val Leu Ser Gly Lys Leu Cys Ala
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40 agg tgc ttc gca agt agc agc atc caa gca ctg aaa ggt agt cag cat
 97
 Arg Cys Phe Ala Ser Ser Ser Ile Gln Ala Leu Lys Gly Ser Gln His
 20 25 30

45 gtg agc ttt gga gtg aaa tct ctt gtc tta agg aat aaa gga aaa aga
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 Val Ser Phe Gly Val Lys Ser Leu Val Leu Arg Asn Lys Gly Lys Arg
 35 40 45

50 ttc cgt cgg agg ctc ggt gct cta cag gtt gtt tgc cag gac ttt cca
 193
 Phe Arg Arg Arg Leu Gly Ala Leu Gln Val Val Cys Gln Asp Phe Pro
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10	gtg	att	gct	gga	gca	gga	tta	gct	ggt	tta	tca	acg	gca	aaa	tat	ctg
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15	gca	gat	gct	ggt	cat	aaa	ccc	ata	ttg	ctt	gag	gca	agg	gat	gtt	ttg
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				115					120					125		
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25	act	ggg	ctt	cat	atc	ttt	ttt	gga	gct	tat	ccc	aac	ata	cag	aac	ttg
	481															
	Thr	Gly	Leu	His	Ile	Phe	Phe	Gly	Ala	Tyr	Pro	Asn	Ile	Gln	Asn	Leu
		145					150					155				
30	ttt	ggc	gag	ctt	ggt	att	aat	gat	cgg	ttg	caa	tgg	aag	gaa	cac	tcc
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	Phe	Gly	Glu	Leu	Gly	Ile	Asn	Asp	Arg	Leu	Gln	Trp	Lys	Glu	His	Ser
	160					165					170					175
35	atg	ata	ttt	gcc	atg	cca	aac	aag	cca	gga	gaa	tcc	agc	cgg	ttt	gat
	577															
	Met	Ile	Phe	Ala	Met	Pro	Asn	Lys	Pro	Gly	Glu	Ser	Ser	Arg	Phe	Asp
					180					185					190	
40	ttt	cct	gaa	aca	ttg	cct	gca	ccc	tta	aat	gga	ata	tgg	gcc	ata	cta
	625															
	Phe	Pro	Glu	Thr	Leu	Pro	Ala	Pro	Leu	Asn	Gly	Ile	Trp	Ala	Ile	Leu
				195					200					205		
45	aga	aac	aat	gaa	atg	cta	act	tgg	cca	gag	aag	gtg	aag	ttt	gct	ctt
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50	gga	ctt	ttg	cca	gca	atg	gtt	ggt	ggc	caa	gct	tat	gtt	gaa	gct	caa
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	Gly	Leu	Leu	Pro	Ala	Met	Val	Gly	Gly	Gln	Ala	Tyr	Val	Glu	Ala	Gln
		225					230					235				
55	gat	ggt	ttt	act	gtt	tct	gag	tgg	atg	aaa	aag	cag	ggt	gtt	cct	gat
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	ata	aat	cct	gat	gag	tta	tcc	atg	cag	tgc	att	ctg	att	gct	tta	aac
	865															
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	913															
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30	Asn	Pro	Asp	Gly	Thr	Val	Lys	His	Phe	Ala	Leu	Thr	Asp	Gly	Thr	Gln
					340					345					350	
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	1105															
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				355					360					365		
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	1153															
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			370					375					380			
	gag	aag	ttg	gtg	gga	gtt	cct	gtt	ata	aat	gtt	cat	ata	tgg	ttt	gat
	1201															
45	Glu	Lys	Leu	Val	Gly	Val	Pro	Val	Ile	Asn	Val	His	Ile	Trp	Phe	Asp
		385					390					395				
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	1249															
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	400					405					410					415
	ctt	tta	agt	gtt	tat	gcg	gac	atg	tca	gta	act	tgc	aag	gaa	tac	tat
	1297															
55	Leu	Leu	Ser	Val	Tyr	Ala	Asp	Met	Ser	Val	Thr	Cys	Lys	Glu	Tyr	Tyr
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 10 Trp Val Gly Arg Ser Asp Thr Glu Ile Ile Glu Ala Thr Met Gln Glu
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 1441
 15 Leu Ala Lys Leu Phe Pro Asp Glu Ile Ala Ala Asp Gln Ser Lys Ala
 465 470 475
 aag att ctg aag tat cat gtt gtg aag aca cca aga tct gtt tac aag
 1489
 20 Lys Ile Leu Lys Tyr His Val Val Lys Thr Pro Arg Ser Val Tyr Lys
 480 485 490 495
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 30 Glu Gly Phe Tyr Leu Ala Gly Asp Tyr Thr Lys Gln Lys Tyr Leu Ala
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 1681
 40 Val Glu Asp Tyr Lys Met Leu Ser Arg Arg Ser Leu Lys Ser Leu Gln
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35 40 45
20 Arg Arg Arg Leu Gly Ala Leu Gln Val Val Cys Gln Asp Phe Pro Arg
50 55 60
Pro Pro Leu Glu Asn Thr Ile Asn Phe Leu Glu Ala Gly Gln Leu Ser
65 70 75 80
25 Ser Phe Phe Arg Asn Ser Glu Gln Pro Thr Lys Pro Leu Gln Val Val
85 90 95
Ile Ala Gly Ala Gly Leu Ala Gly Leu Ser Thr Ala Lys Tyr Leu Ala
100 105 110
30 Asp Ala Gly His Lys Pro Ile Leu Leu Glu Ala Arg Asp Val Leu Gly
115 120 125
Gly Lys Ile Ala Ala Trp Lys Asp Glu Asp Gly Asp Trp Tyr Glu Thr
130 135 140
Gly Leu His Ile Phe Phe Gly Ala Tyr Pro Asn Ile Gln Asn Leu Phe
145 150 155 160
35 Gly Glu Leu Gly Ile Asn Asp Arg Leu Gln Trp Lys Glu His Ser Met
165 170 175
Ile Phe Ala Met Pro Asn Lys Pro Gly Glu Ser Ser Arg Phe Asp Phe
180 185 190
Pro Glu Thr Leu Pro Ala Pro Leu Asn Gly Ile Trp Ala Ile Leu Arg
195 200 205
40 Asn Asn Glu Met Leu Thr Trp Pro Glu Lys Val Lys Phe Ala Leu Gly
210 215 220
Leu Leu Pro Ala Met Val Gly Gly Gln Ala Tyr Val Glu Ala Gln Asp
225 230 235 240
45 Gly Phe Thr Val Ser Glu Trp Met Lys Lys Gln Gly Val Pro Asp Arg
245 250 255
Val Asn Asp Glu Val Phe Ile Ala Met Ser Lys Ala Leu Asn Phe Ile
260 265 270
Asn Pro Asp Glu Leu Ser Met Gln Cys Ile Leu Ile Ala Leu Asn Arg
275 280 285
50 Phe Leu Gln Glu Lys His Gly Ser Lys Met Ala Phe Leu Asp Gly Asn
290 295 300
Pro Pro Glu Arg Leu Cys Met Pro Ile Val Asp His Val Arg Ser Leu
305 310 315 320
55 Gly Gly Glu Val Arg Leu Asn Ser Arg Ile Gln Lys Ile Glu Leu Asn
325 330 335
Pro Asp Gly Thr Val Lys His Phe Ala Leu Thr Asp Gly Thr Gln Ile

[illegible]